

REMARKS

The Specification has been amended to address the 112 rejection and other language informalities noted by the Examiner. No new matter has been entered.

The claims have been amended to address the claim objections noted by the Examiner, and to clarify the invention. No new matter has been entered.

The finality of the restriction requirement is noted. Applicants confirm their election of claim group I and titanium species¹ and request that the non-elected claims be maintained in this application, without further action, for possible rejoinder and/or for filing of a divisional application.

Turning to the art rejections, it is submitted that the claims, as amended, are neither anticipated by or obvious from any of the applied art.

Considering first the rejection of claims 1, 60, 64-66 and 93-95 as being anticipated by Slatin, in rejecting these claims as anticipated by Slatin, the Examiner characterizes Slatin as teaching electrochemically reducing an anode formed of titanium dioxide and bone charcoal mixture. Actually, Slatin's anode is formed of titanium carbide (TiC). See col. 1, line 47-57 and Example 4, column 4 beginning at line 11. Slatin teaches forming an anode titanium carbide and using that anode in an electrochemical cell to produce titanium. This is quite different from Applicants' independent claims 1, 60 and 66, which require electrochemical reduction of an anode formed of a titanium oxide-carbon composite, more specifically a titanium oxide-or titanium suboxide-carbon composite (independent claims 1 and 66) or a

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¹ The action at page 11 indicates that the oral election species was made "with traverse". This is not so. The election of species was made without traverse.

1 and 66) or a titanium suboxide-carbon composite (claim 60) in a molten salt electrolyte.

Thus, claims 1, 60 and 66 cannot be said to be anticipated by Slatin.

Claims 64 and 65 depend on claim 60, and claims 93-95 depend directly or indirectly on claim 66, and are allowable over Slatin for the same reasons above adduced relative to claims 60 and 66, respectively, as well as for their own additional limitations.

The rejection of claim 54 as anticipated by Feige also is in error. The Examiner cites Feige as teaching a method for production of purified titanium from rutile ore which comprises electrowinning from an anode in a molten salt electrolyte. However, the Feige patent does not teach electrowinning from rutile (TiO_2) ore. Rather, Feige forms a layer of manganese oxide on an electrode formed of pressed titanium powder. Thus, Feige cannot be said to anticipate claim 54 which requires electrowinning from an anode formed of a mixture of titanium suboxide/carbon composite in a molten salt electrode.

Turning to the rejection of claims 11, 12, 61 and 76-77, as obvious from Slatin in view of Westfall, claims 11 and 12 are directly or indirectly dependent on claim 1; claim 61 is dependent on claim 60, and claims 76-77 are directly or indirectly dependent on claim 66. The deficiency of Slatin vis-à-vis claims 1, 60 and 66 are discussed above. It is not seen that the patent to Westfall supplies the missing teachings to Slatin to achieve or render obvious claims 1, 60 and 66, or claims 11, 12, 61 and 76-77, which depend therefrom, as the case may be. The Examiner cites Westfall as teaching adding a strong Lewis acid to a molten salt electrolyte or adding concentrated hydrochloric acid to a molten salt electrolyte or using an electrolyte with an eutectic mixture. Even assuming Westfall is as the Examiner suggests, Westfall also fails to teach electrochemical reduction of an anode formed of a titanium oxide or titanium suboxide-carbon composite in a molten salt electrolyte as required by Applicants' independent claims.

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Thus, no combination of Slatin and Westfall reasonably could be said to achieve or render obvious independent claims 1, 60 or 66, or any of the claims which depend thereon.

The rejection of claim 85 as obvious from Slatin in view of Rand likewise is in error. Claim 85 is dependent on claim 60. The deficiencies of the primary reference Slatin vis-à-vis claim 60 are discussed above. It is not seen that Rand supplies the missing teachings to Slatin to achieve or render obvious claim 60 or claim 85, which depends thereon. The Examiner refers to Rand as teaching heating a titanium oxide with carbon under an inert atmosphere. While Rand may describe electro-refining metallic titanium from titanium oxide, there is no teaching or suggestion within the four corners of Rand of forming a titanium suboxide-carbon composite anode by heating a titanium oxide with carbon as stated by the Examiner. In fact, there is absolutely no mention of carbon found in column 4, lines 14-70 of Rand. Accordingly, no combination of Slatin and Rand reasonably could be said to achieve or render obvious claim 60 or claim 85, which depends thereon.

The rejection at page 17, first full paragraph, makes mention of a combination of Slatin and Feige. While it is not known which claims the Examiner meant to reject based on the Slatin/Feige combination, it is noted *supra*, neither Slatin nor Feige teach or suggest electrochemically reducing, in a molten salt electrolyte, an anode formed of a titanium oxide or titanium suboxide-carbon composite. Thus, no combination of Slatin and Feige would achieve or render obvious any of Applicants' claims in any event.

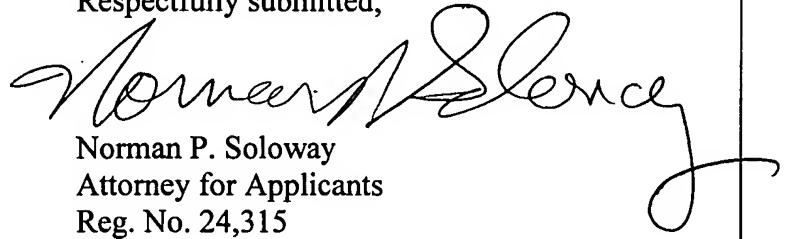
Having dealt with all the objections raised by the Examiner, the Application is believed to be in order for allowance. Early and favorable action are respectfully requested.

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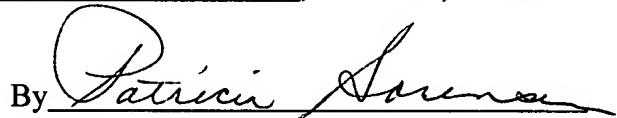
Respectfully submitted,


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